

AN EMENDED DESCRIPTION OF THE MARINE
NEMATODE GENUS *HALENCHUS* COBB, 1933
(TYLENCHINAE)*

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The genus *Halenchus* was erected by Cobb (1933) to receive *Tylenchus fucicola* de Man and Barton in de Man, 1892 (= *Halenchus fucicola* (de Man and Barton in de Man, 1892) Cobb, 1933) and *Tylenchus mediterraneus* Micoletzky, 1922 (= *Halenchus mediterranea* (Micoletzky, 1922) Cobb, 1933). Designating the former species as type, Cobb proposed the following generic diagnosis:

"Tylenchidae (Tylenchinae). With the characters of *Tylenchus* but with the oesophageal bulbs vestigial, the junction of oesophagus and intestine more or less indefinite, and the terminus of the tail hooked towards ventral side. Differs from *Neotylenchus* in latter two characters and in that the lip region is divided into six instead of eight sectors. Differs from *Hexatylus* in having three and not six bulbs at base of spear. Spear smaller in male. Differs from all three also in being marine."

These characters for the genus *Halenchus* are not at variance with de Man's account for the type species (1892); however, it is felt that they are not sufficient for an adequate generic diagnosis. Cobb's description was based essentially on de Man's account of *T. fucicola* since Micoletzky, in his description of *T. mediterraneus*, admitted that his species very closely resembled *T. fucicola* and emphasized only what he regarded as specific differences.

De Man, in his description of the esophagus of *T. fucicola*, emphasized the lack of definite form of the metacarpus (Fig. 1, C) in his statement "Abweichend von den anderen Tylenchen bildet der Oesophagus also nicht einen mehr oder weniger scharf begrenzten und abgesetzten, vorderen Bulbus . . ." Micoletzky's failure to describe the metacarpus of *T. mediterraneus* suggests that his observations paralleled de Man's with respect to this part of the body. De Man's description of *T. fucicola* referred to the above mentioned metacarpal area as having a "Verdickung des Oesophagus resp. die Erweiterung des Chitinrohres" (Fig. 1, B). He con-

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tinued, "Hinter dem letzteren schwillt das Hinterende des Oesophagus, wie gewöhnlich, taschenartig an, und man beobachtet darin einen rundlichen Kern, der 8 - 8.5 μ breit ist, mit 3 μ breitem Nucleolus." In support of this statement, he figured the posterior part of the esophagus as overlapping the intestine (Fig. 1, D). Cobb (1933) erroneously believed both "bulbs" of the esophagus to be vestigial. A more stringent interpretation of de Man's account would suggest that the metacarpus is indistinct, but possesses a sclerotized portion in lieu of valves (Fig. 1, B) while the posterior portion of the esophagus lies free in the body, overlapping the intestine.

As stated previously, Micoletzky (1922) felt that his *T. mediterraneus* closely resembled *T. fucicola* and that "*T. mediterraneus* ist vermutlich die freilebende Stammart von *T. fucicola*." He noted three major specific differences between *T. mediterraneus* and *T. fucicola*:

- (1) The stylet of the former was 1/8 - 1/9th of the total esophageal length, while the stylet of the latter was 1/13 - 1/15th of the esophageal length.
- (2) The postanal parts of the caudal alae for the former were less than 1/4th of the tail length, while those for the latter were more than 1/4th of the tail length.
- (3) Both species came from different habitats.

Micoletzky then presented some minor differences in measurements of the two species. In his paper on *T. fucicola*, de Man pointed out that the total esophageal length varies; since the stylet length of both species is fairly constant at 17 - 18 μ , Micoletzky's first point must be repudiated as a valid difference between species. His further contention that differences in the length of the postanal part of the caudal alae in relation to the total tail length represent specific differences should likewise be questioned in view of the work of Inglis (1954) on allometric growth in nematodes, as well as the author's personal observations on differences in size of specific structures between different populations of a given nematode species. The work of Goodey (1952) and Stephenson (1942) likewise necessitates a cautious attitude toward what constitutes a specific difference when different cultural media are involved. The foregoing considerations imply that *T. mediterraneus* is conspecific with *T. fucicola* and accordingly, a synonym of the latter species. Final adjudgment, however, should be made preferably after suitable

scrutiny of the type material of these two species. The inaccessibility of such material thus prohibits the synonymizing of these species at this time.

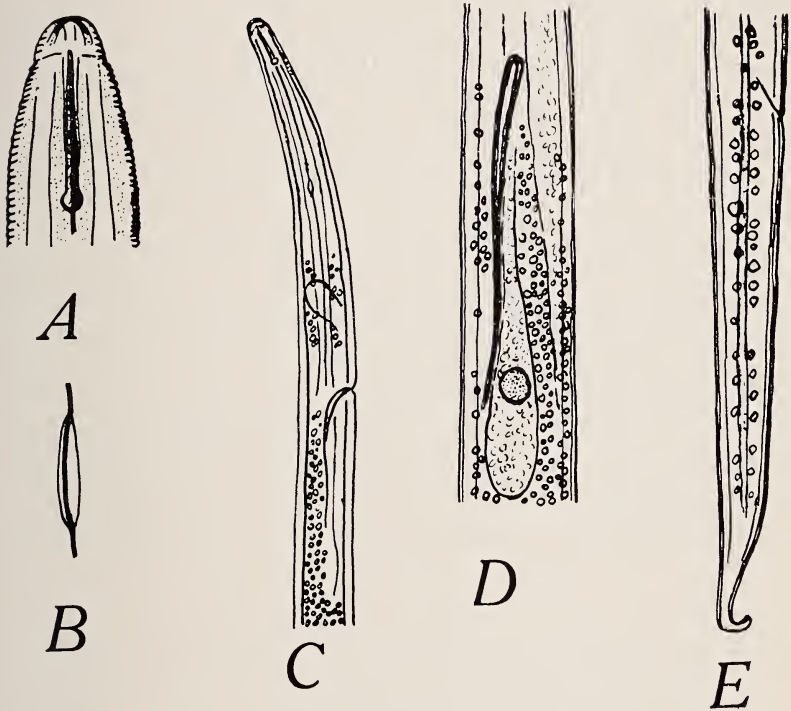


Figure 1. *Tylenchus fucicola* de Man and Barton in de Man, 1892. A. Head end of an adult female, lateral view, X 1300. B. The widening of the inner sclerotized tube in the anterior part of the esophagus of a female, X 1300. C. Anterior portion of a gravid, adult female, X 368. D. Portion of the esophagus posterior to the excretory pore of an adult female in a ventral position. E. Tail of a female 1.26 mm. long, lateral view, X 650 (after de Man).

Two additional species of the genus *Halenchus* were established by Chitwood (1951), who redesignated *Tylenchus* (*Chitinotylenchus*) *zostericola* Allgen, 1934, as *Halenchus zostericola* (Allgen, 1934) Chitwood, 1951, and described a new species *Halenchus mexicanus* Chitwood, 1951. An inspection of the description and figures of Allgen's species (1934) clearly shows that *T. zostericola* does not agree with the characters of the genus *Halenchus*. Thus the renaming of this species (Allen, 1955) as *Radopholus zostericola*

(Allgen, 1934) Allen, 1955, is justifiable particularly since Allgen pointed out that the taxa were closely related to *Tylenchus gracilis* de Man, 1880, (= *Radolpholus gracilis* (de Man, 1880) Hirschmann, 1955).

The description of *Halenchus mexicanus* was based on one juvenile female obtained from Aransas Bay, Texas. Chitwood figured the metacarpus to be well defined in shape and with definite valves, and the esophageal glands to be free in the body overlapping the intestine. He estimated the vulva to be located at a point 48 per cent of the body length (presumably connected to amphidelphic gonads) and described the tail to be conoid and not hooked at the tip. In contrast, de Man's description of *H. fucicola* states that the female reproductive system is monodelphic and prodelphic, while Cobb's generic diagnosis for *Halenchus* designates the tail to be ventrally hooked, presumably based on de Man's assertion that this is a good character of *H. fucicola* (Fig. 1, E). This reviewer accepts Cobb's view that the hooked-tail character represents a generic rather than a specific trait. Accordingly *Halenchus mexicanus* is designated as *species inquirenda* pending a future discovery of additional specimens.

The diagnosis for the genus *Halenchus* is emended as follows:

Genus *Halenchus* Cobb, 1933

Diagnosis emended—*Tylenchinae*. Lip region striated, stomatostyle distinct and knobbed. Metacarpus indistinct, presence of valves questionable. Esophageal glands lying free in body, overlapping intestine. Female gonad monodelphic and prodelphic with vulva situated in latter third of body. Male tail with gubernaculum and caudal alae. Posterior portion of tails of both sexes characteristically hooked. Marine habitat.

Type Species: *H. fucicola* (de Man and Barton in de Man, 1892) Cobb, 1933.

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